Homework 3 Characters
Unit 2 Data representation

PG ONLINE

Name: ..... Class: ..... Mark: .....

1. A simple three-letter code word is saved to a personal disk.

   (a) What is the size in bytes of the code word? [1]

   (b) The code word is represented on the disk in a binary format, saved as:

   01000011 01000001 01000010

Character	Binary
A	**01000001**
B	**01000010**
C	**01000011**
D	**01000100**
E	**01000101**

   Using the section of the ASCII table above, what is the code word? [3]

   (c) What is the hexadecimal representation of the code word? [2]

   (d) Calculate the denary value representing the letter **E**. [1]

2. Integers which are to be used in calculations are represented as binary numbers.

(a) What is the 8-bit binary representation of the number 76? [1]

(b) The ASCII character 7 is represented by the denary number 55.

Convert the ASCII string '76' to binary. [1]

(c) Give **two** advantages of representing integers in binary rather than ASCII. [2]

3. (a) Name one limitation of the 8-bit extended ASCII character set. [1]

(b) Explain how these limitations can be overcome. [2]

4. The following program has been created.

```
1    age = input("Enter your age in years (between 0-8): ")
2    charNum = ASC(age)
3    charNum = charNum + 1
4    age = CHR(charNum)
5    print(age)
```

(a) Explain what line 2 of code does. [2]

(b) Explain what line 4 of code does. [2]

(c) The program requires the age to be between 0 and 8.

Explain the problem that will occur if numbers outside this range are used. [2]

[Total 20 marks]